

# **Exhibit 3**

Highly Confidential - Larry Russell

1 UNITED STATES DISTRICT COURT  
2 EASTERN DISTRICT OF MICHIGAN  
3 SOUTHERN DIVISION  
4 \_\_\_\_\_  
5 In re: FLINT WATER CASES )  
6 \_\_\_\_\_ ) Civil Action No.  
7 ) 5:16-cv-10444-JEL-MKM  
8 Elnora Carthan, et al., ) (consolidated)  
9 )  
10 Plaintiffs, )  
11 vs. ) Hon. Judith E. Levy  
12 ) Mag. Mona K. Majzoub  
13 Governor Rick Snyder, )  
14 et al., )  
15 Defendants. )  
16 and )  
17 Bellwether III )  
18 Case No. 17-10164 )  
19 \_\_\_\_\_ )  
20 HIGHLY CONFIDENTIAL  
21 Wednesday, December 28, 2022  
22 Volume I  
23 Remote videotaped deposition of  
24 LARRY L. RUSSELL, Ph.D., commencing at 9:02 a.m., on  
the above date before Carol A. Kirk, Registered Merit  
Reporter, Certified Shorthand Reporter, and Notary  
Public.  
GOLKOW LITIGATION SERVICES  
877.370.3377 ph | 917.591.5672 fax

1           A.     The pipes were cut in half, so  
2     they're pieces.

3           Q.     Okay. So let me just make sure  
4     I'm understanding what you're saying.

5                     Is that -- is it -- were they cut  
6     in half when you left the home in Flint or at  
7     sometime later?

8           A.     No. They were transported by me  
9     to our materials lab when they were cut in half,  
10    and that's when they received their letter  
11    descriptors so I could keep track of what they  
12    were.

13          Q.     Okay. And so just to track this,  
14    they were transported by you from Flint; is that  
15    right?

16          A.     Yes.

17          Q.     And then -- where did you -- you  
18    said you took them to your materials lab.

19                     Is that different from the  
20    Christensen location?

21          A.     No.

22          Q.     Okay. So you took them to the  
23    Christensen location; is that right?

24          A.     Well, first I brought them to my

1 house.

2 Q. Okay.

3 A. And they sat here until we  
4 arranged to do this analysis to generate the  
5 supplemental report.

6 Q. Okay. So we'll talk more, but  
7 approximately how long did the samples stay in  
8 your home?

9 A. A month, two months, something  
10 like that. I can look at exactly, but that's  
11 kind of what I recall.

12 Q. Okay. And so the quantity 2, just  
13 again so I'm clear, when these samples were  
14 transported by you from Flint, the quantity was  
15 just 1, and then the pipe was split to make 2  
16 sometime later; is that right?

17 A. No. I think actually it's  
18 referring to the two pieces of pipe, that  
19 there's a 5.25-inch piece of pipe and an 8-inch  
20 piece of pipe.

21 Q. So, in other words --

22 A. There's two pieces of pipe there.

23 Q. So it's just like a joint and  
24 there were two pieces of pipe that were removed?

1 with the plumber, it appeared to be the most  
2 expeditious approach would be just to replace it  
3 all, and that's what we did because we weren't  
4 going to leave anything in there that we didn't  
5 have to leave. And it would have made our  
6 reassembly more complicated, so we just took  
7 everything.

8 Q. Dr. Russell, other than the pipe  
9 segments or pieces identified in this Exhibit 6  
10 that were taken from the [REDACTED] and [REDACTED]  
11 homes, are there any other pipe pieces or  
12 segments or plumbing parts that were removed by  
13 you or others working on your behalf from any  
14 other location in the City of Flint?

15 A. No.

16 Q. Okay. Now, when you went out to  
17 collect these pipes, did you try to contact  
18 anybody working for VNA to tell them you were  
19 going to do so?

20 A. No.

21 Q. Okay. And it's fair to say,  
22 Dr. Russell, VNA did not have an opportunity to  
23 observe the collection of pipe and plumbing  
24 materials at either of these homes on [REDACTED] or

1 [REDACTED], correct?

2 A. Understand that while the COVID  
3 has backed down substantially by this point in  
4 time, we were very cautious about introducing  
5 ourselves into someone's home in Flint. So it  
6 was clearly a public health -- resident health  
7 issue to minimize the number of people present.

8 So I just proceeded to remove the  
9 pipes in the most expeditious manner possible  
10 and had no involvement with Veolia or anyone  
11 else about the pipes.

12 Q. Okay. And so VNA wasn't there,  
13 were they, when you removed the pipes?

14 A. No.

15 Q. And did you contact VNA when you  
16 were going to do the testing of the pipes at the  
17 Christensen lab?

18 A. We would never contact the  
19 defendants in a situation like this, you know.  
20 The lawyers make those connections. We don't  
21 approach people like -- I don't even know who to  
22 approach in VNA, frankly.

23 Q. Was anybody from VNA present when  
24 the testing was done at the Christensen lab?

Highly Confidential - Larry Russell

1 A. No.

2 Q. Okay. And you may have said this,  
3 Dr. Russell, but for the nine samples that are  
4 included in your report, how did you go about  
5 deciding which ones to include and which ones to  
6 not include?

7 A. Okay. Well, let's do it  
8 systematically. Let's start at [REDACTED].

9 Q. Okay.

10 A. [REDACTED] was replumbed around  
11 2008 to go from what I believe was galvanized  
12 based on item C and D to copper. And in the  
13 basement, we had full access to the copper pipe.

14 So we chose -- I chose -- marked  
15 on the pipe, "Tell the plumber cut here, cut  
16 here, cut here, cut here," and they removed two  
17 sections of pipe.

18 We could have removed more pipe,  
19 but being you can't even really see inside of it  
20 after you cut it, and it's fairly dark in a  
21 basement anyway, I made the decision to just  
22 remove those pipes and say, "Okay. We've got a  
23 hot water, we've got a cold water, and here we  
24 go." So that's how we handled [REDACTED].

1     galvanized is removed with a Sawzall.

2             Q.     Okay. And for the copper?

3             A.     The copper was -- well, it could  
4     be either on it, depending on where it was  
5     removed from. There isn't that much copper, but  
6     I believe it was cut with a Sawzall.

7             Q.     Okay. Are there any notes or  
8     records that were taken during the removal  
9     process?

10            A.     Only my photographs.

11            Q.     And have all of those photographs  
12     been produced?

13            A.     Yes.

14            Q.     Okay. They're all included in  
15     your report?

16            A.     No.

17            Q.     Okay. You provided additional  
18     photographs to counsel?

19            A.     Yes.

20            Q.     Okay. And these are photographs  
21     of the work being done of the removal of pipes  
22     in the homes in Flint?

23            A.     I don't know so much that they're  
24     photographs of the removal as much as they are



1 photographs of the pipes.

2 Q. Okay.

3 A. And it could be before or during  
4 the removal. I don't quite remember.

5 The plumbers were faster than me,  
6 so I had to scramble to keep up with the  
7 plumbers to get the pipes all marked. It's  
8 easier to remove them than it is to catalog  
9 them. So I did the best I could do. And, like  
10 I say, it just got a little ahead of me, so I  
11 worked very hard to get them all marked and  
12 dated and identified so that there wasn't any  
13 question that we would get them mixed up.

14 Q. Okay. Were there any precautions  
15 taken to minimize vibration during the cutting?

16 A. No.

17 Q. Were there any precautions taken  
18 to guard against cross-contamination from one  
19 pipe to the next?

20 A. The samples that I was most  
21 concerned about were put in baggies. So they  
22 were separated from the group. But the pipes --  
23 the majority of the ones you asked about that  
24 I didn't work on, we didn't do work on, were

1 just put into the box on a towel.

2 I did have some cushioning in the  
3 container to absorb the movement of them, so --  
4 and there was a pillow that I took from the  
5 hotel and put it on top of them to kind of  
6 sandwich them in so we could move them.

7 Q. Was there any residual --

8 MR. CONNORS: Mr. Ter Molen, I'm  
9 sorry to interrupt. I'd just like to  
10 ask for a break when you're at a good  
11 stopping point.

12 MR. TER MOLEN: Okay. Why don't  
13 I go a few questions. I talked about a  
14 longer break. I hoped to get farther,  
15 but that's fine. Let me do a little bit  
16 more, and then we'll take a longer  
17 break.

18 Is that okay, Jordan, if I go  
19 another four or five minutes?

20 MR. CONNORS: That's fine with me.

21 Thank you.

22 MR. TER MOLEN: All right.

23 BY MR. TER MOLEN:

24 Q. Was there any residual water in

1 any of the pipes during the extraction process,  
2 Dr. Russell?

3 A. They pretty well drained while we  
4 were there.

5 Q. Okay.

6 A. Because the plumber has to take  
7 them out, so it's going to spill on him if  
8 they're not empty. So we drained the water. We  
9 shut the water off to the house, and we drained  
10 the water from the basement the best we could.

11 Q. Okay. And it sounds like for some  
12 of the pipes, when they were removed, there was  
13 some water that then came out and got on the  
14 plumber; is that right?

15 A. No. I said it would have gotten  
16 on the plumber. You asked if there was water in  
17 the pipes, and I said that if the plumber had  
18 cut them with water in them, it would have  
19 drained onto the plumber --

20 Q. Yes.

21 A. -- which he wouldn't be interested  
22 in having happen. So we did a pretty good job  
23 of emptying them.

24 Q. Okay. Were the ends of the pipes

1 sealed after they were removed?

2 A. No. But the ones through H or I,  
3 whichever one we did, are in the plastic  
4 baggies.

5 Q. Okay.

6 A. So they're isolated away from the  
7 other pipes.

8 Q. And were the interiors, the pipe  
9 samples, kept moist after they were removed?

10 A. Only with the moisture that was in  
11 them. Nothing in particular.

12 Q. Okay. And then you testified you  
13 took the pipe samples from Flint on the airplane  
14 back with you to your home in California,  
15 correct?

16 A. Yes, sir.

17 Q. Okay. And so that would have been  
18 on February -- February 9, February 10.

19 A. 10.

20 Q. And you were responsible for  
21 packaging all the pipes?

22 A. Well, me and TSA. They opened my  
23 box --

24 Q. I see.

1           A.       -- in front of me, in front of me.

2       And I explained what it was, and I worked with  
3       them to put it all back together.

4           Q.       Okay. And then you kept the pipes  
5       at your home; is that right?

6           A.       Yes.

7           Q.       Okay. And then you were saying  
8       they were at your home for a couple months  
9       approximately before they went to Christensen  
10      labs for some testing?

11          A.       Before I took them to Christensen  
12      labs. Yes.

13          Q.       Before you took them. Okay.  
14                   And had you inspected the pipes at  
15      all while they were at your home during that  
16      couple months before you took them to the lab?

17          A.       No. I have a pretty good memory,  
18      so I knew what I had.

19          Q.       Okay. Where in your home were  
20      they kept?

21          A.       In the garage.

22                   MR. TER MOLEN: Okay. And the --  
23                   this is probably a good stopping point.  
24                   Why don't we stop here. And why don't

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1 fine.

2 So who was the person who cut the  
3 pipe samples open?

4 A. Split them?

5 Q. Yes.

6 A. Conrad Christensen.

7 Q. Conrad Christensen. Who else was  
8 there with him at the time, if anybody?

9 A. Me.

10 Q. Okay. Was Todd there as well?

11 A. No.

12 Q. Anybody other than you or  
13 Mr. Christensen take notes at the time?

14 A. No.

15 Q. Okay. By the way, before I  
16 forget, Dr. Russell, during the 40-odd minute  
17 break we just took for lunch, were you also on  
18 the phone with plaintiffs' counsel?

19 MR. CONNORS: Objection; vague and  
20 ambiguous.

21 And you can answer -- I don't  
22 know. If you understand, you can answer  
23 yes or no.

24 THE VIDEOGRAPHER: We lost your

1 image, Dr. Russell.

2 THE WITNESS: Yeah, I know. Hang  
3 on one second.

4 A. Yes, we spoke briefly.

5 Q. Okay. What did plaintiffs'  
6 counsel tell you, and what did you say in  
7 response?

8 MR. CONNORS: Again, objection.  
9 It's a totally improper question. It  
10 seeks work product material. I instruct  
11 the witness not to answer.

12 MR. TER MOLEN: Okay. I --

13 MR. CONNORS: And I'll just make a  
14 continuing objection and make clear  
15 I will instruct the witness not to  
16 answer about work product communications  
17 between him and counsel.

18 BY MR. TER MOLEN:

19 Q. Dr. Russell, are you refusing to  
20 talk about conversations you had with counsel  
21 during break based on his instruction to you?

22 A. Yes.

23 Q. Okay. What device was used to cut  
24 open the pipe laboratories by Mr. Christensen?

1 A. Bandsaw.

2 Q. All right. Is it the bandsaw that  
3 he had handy at his home?

4 A. It's not his home. It's his  
5 laboratory. It's located at his home, but it's  
6 in a separate building.

7 Q. Okay. And it's a separate  
8 building out back. Did it used to be a garage?

9 A. No. It's a barn.

10 Q. Okay. And so it's the bandsaw in  
11 his barn that he used to cut the pipe open?

12 A. Well, it's the bandsaw in his lab  
13 that he used.

14 Q. Okay. And did he take any  
15 precautions to prevent cross-contamination from  
16 one pipe sample to the next?

17 A. The normal precautions it takes to  
18 clean in between.

19 Q. Okay. Let's see. And you said  
20 that he did not keep any notes on his work?

21 A. Not -- while we were doing it, no.

22 Q. Okay. Was there any chain of  
23 custody that you maintain for taking the pipe  
24 samples to Christensen Materials?



1 MR. CONNORS: Objection; vague and  
2 ambiguous.

3 A. No, because I maintained control  
4 of the samples.

5 Q. So you were there for the entire  
6 period of the testing; is that right?

7 A. Yes.

8 Q. Okay. After the pipes had been  
9 examined, cut at Christensen Materials, what  
10 happened to them next?

11 A. He took them into the electron  
12 microscope.

13 Q. Okay. And that's also in that  
14 barn area?

15 A. Well, there's a separate building  
16 attached to the barn where the lab is  
17 physically.

18 Q. I see. Okay. And that's where  
19 the electron microscope is?

20 A. Yes, sir.

21 Q. Okay. Okay. So if we can look at  
22 your report that we've marked as Exhibit 3 and  
23 look at Attachment 3 to that report.

24 Okay. So the Attachment 3,

1     there's a device on it that emits x-rays and  
2     measures the components that are in -- the  
3     metallic components and other components that  
4     are in the sample.

5             Q.     Okay. So some work was done with  
6     the electron microscope at the Christensen  
7     laboratory location, and then you brought  
8     materials back to your home. You kept them  
9     there for a while, and then you scraped off some  
10    of the scale material and sent that out for  
11    testing; is that right?

12            A.     Yes, to improve the level of  
13    detection so that we could get to more -- wet  
14    chemistry is more accurate at the low levels  
15    than -- lower levels than is the EDX.

16            Q.     Okay. Were you present at A&R  
17    Laboratories when they did their analyses?

18            A.     No.

19            Q.     Okay. Did their report come  
20    directly to you?

21            A.     No.

22            Q.     Who did it come to?

23            A.     It's addressed on there, Clinical  
24    Labs, to Styles, Grand Terrace.

1 Do you see that?

2 A. Yes, sir.

3 Q. Okay. What work did you do to  
4 determine that the home had been replumbed in  
5 2008?

6 A. Well, there's a visual observation  
7 to see that it's now plumbed in copper, and then  
8 we asked the homeowner.

9 Q. And that visual observation is --  
10 that doesn't tell you the date, right? It just  
11 tells you the home had been replumbed?

12 A. Of course.

13 Q. Okay. And so you spoke with the  
14 homeowner, and this is Mrs. Kelso?

15 A. I think so. That sounds familiar.

16 Q. Okay. Is it Rhonda Kelso?

17 A. Yes.

18 Q. Okay. And are you aware,  
19 Dr. Russell, that Ms. Kelso testified at her  
20 deposition that, in fact, the home was replumbed  
21 in the year 2000, not 2008?

22 A. No, I wasn't aware of that.

23 Q. Okay. Would that timing make a  
24 difference to you, Dr. Russell?

1 that you would expect that these pipes, these G,  
2 H, and I had been installed sometime before  
3 1960, right?

4 A. Yes. It's, of course, still  
5 available, so it's hard to know if a pipe  
6 section was replaced or not, but it didn't  
7 appear that that had happened.

8 Q. Okay. And on page 38 of  
9 Exhibit 4, Doctor, you have the opinion that  
10 these pipe samples were down to paper thin  
11 remaining wall thickness in many locations; is  
12 that right?

13 A. Well, I don't know. Can you show  
14 me the page?

15 Q. Yeah. Sorry.

16 A. Okay. This is talking about -- if  
17 you're pointing at that paragraph, it's 119 at  
18 the beginning.

19 Q. That's right. The copper pipes at  
20 [REDACTED] were reportedly installed, and then  
21 you move down to the field pipes at  
22 [REDACTED]?

23 A. Yes. Okay. And the question is?

24 Q. So I'm just reading -- I was

1     referencing the last sentence in that second  
2     paragraph on page 38 of your report which says,  
3     "These pipes" -- which I understand refers to  
4     the galvanized steel pipes -- experienced  
5     through-wall pitting and were down to paper thin  
6     remaining wall thickness in many locations at  
7     the time that I removed them.

8                     That's what you said in your  
9     report, right?

10             A.     Yes, sir. And it's also shown in  
11     the table that we were just looking at.

12             Q.     Okay. And so what does paper thin  
13     mean to you, Dr. Russell?

14             A.     Well, they weren't leaking. But  
15     as I explained earlier, when the plumber put a  
16     pipe wrench on them to remove them -- because  
17     they're threaded pipes, the first step is to try  
18     to unscrew them, unthread them. When he did  
19     that, the pipes sheared off at the fitting.

20             Q.     Okay. And did -- when the pipes  
21     sheared off, did you just take the segment that  
22     had been sheared off, or did you do -- did the  
23     plumber do any further cutting of the pipe?

24             A.     Oh, no. We had to remove both

1 pieces because the portion that it is threaded  
2 into now has a piece of the pipe in it.

3 Q. Okay. So it's your testimony --  
4 let me ask it differently, Doctor.

5 Are all of the pieces of pipe that  
6 you took from Flint cut on both ends?

7 A. No.

8 Q. Okay. So some of the pieces of  
9 pipe that you took from Flint show evidence of  
10 having been sheared off when the plumber put the  
11 wrench on it.

12 Is that what you're saying?

13 A. That's what I recall.

14 Q. Okay. Are any of the nine samples  
15 that I think were included in your report -- do  
16 any of those nine samples show the sheering that  
17 you referenced?

18 A. I believe they do.

19 Q. Okay. Which specific samples?

20 A. Can you show them to me, please.

21 Q. Sure.

22 So why don't we just start with  
23 the -- maybe Attachment 1. We can just kind of  
24 scroll go through the photos. Just go down a

1           Q.     Okay. Okay. And did you take any  
2     wall thickness measurements for samples G, H, or  
3     I?

4           A.     When you have a through-wall  
5     event, whether a pit or a shearing, there's no  
6     wall left to measure. So there is no wall  
7     thickness there. We didn't look beyond that.  
8     That was the thinnest portion that we saw.

9           Q.     Okay. So looking -- we're looking  
10    right now at sample I, and obviously we can see  
11    pipe there. But your testimony is that you  
12    didn't try to measure the thickness of that pipe  
13    at any location?

14          A.     Well, Mr. Ter Molen, there's not a  
15    lot of point in that. When it has no wall  
16    thickness left, in other words, it's the weakest  
17    link in the chain, it doesn't do much good to  
18    measure where it is okay if you've got a spot  
19    where it is sheared off.

20          Q.     So, Dr. Russell, just so I'm clear  
21    here, just looking at the longitudinal  
22    sectioning of the pipe here, I see shiny metal  
23    there, and doesn't that shiny metal reflect the  
24    wall of the pipe?

Highly Confidential Larry Russell (Cont.)

1 UNITED STATES DISTRICT COURT  
2 EASTERN DISTRICT OF MICHIGAN  
3 SOUTHERN DIVISION  
4

5 In re: FLINT WATER CASES )  
6 )

Civil Action No.

6 ) 5:16-cv-10444-JEL-MKM

Elnora Carthan, et al., ) (consolidated)

7 )

Plaintiffs, )

8 )

vs. ) Hon. Judith E. Levy

9 ) Mag. Mona K. Majzoub

Governor Rick Snyder, )

10 et al., )

)

11 Defendants. )

)

12 and )

)

13 Bellwether III )

Case No. 17-10164 )

14 )

15 HIGHLY CONFIDENTIAL

16 Thursday, December 29, 2022

17 Volume II

18 Continued Remote videotaped deposition of  
19 LARRY L. RUSSELL, Ph.D., commencing at 10:07 a.m., on  
20 the above date before Carol A. Kirk, Registered Merit  
21 Reporter, Certified Shorthand Reporter, and Notary  
22 Public.  
23

GOLKOW LITIGATION SERVICES

24 877.370.3377 ph | 917.591.5672 fax



1           A.     In our storage facility.

2           Q.     Is that a climate-controlled  
3     facility?

4           A.     Well, you know, our climate is  
5     pretty moderate here in the Bay area, so it's  
6     not air conditioned or anything like that. No.  
7     It's just where we store our records and things.

8                     So we store a lot of paper in  
9     there without any concern whatsoever. And as I  
10    said, it doesn't get that cold. It doesn't get  
11    that hot, so ...

12          Q.     You mentioned that you had to cut  
13    them to a certain length to get them into the  
14    container that you were taking with you. I'm  
15    curious, what kind of a container they're stored  
16    in now. Is that the same container, or were  
17    they transferred to a different container?

18          A.     It's actually not the same  
19    container. There was some damage to the  
20    container in shipment, so we transferred the  
21    container to a more sturdy container.

22                    You know, when I went there, we  
23    weren't exactly sure what we were going to do in  
24    terms of pipe removal. And then it became clear

1     that we had more pipe than I was anticipating  
2     taking back. So I needed a larger container.

3                     We picked up one and used it, but  
4     it -- American Airlines managed to bang it up a  
5     little bit.

6             Q.     If you could just describe for me  
7     generally the type of container that they're in  
8     now. Is it a plastic tub? What kind of  
9     container are they in?

10            A.     Plastic tub is a great descriptor.  
11     They're currently in a Rubbermade plastic,  
12     fairly good size container, like exactly I think  
13     what we're both envisioning. You know, it's  
14     something that's about three feet by two feet by  
15     two and a half feet deep and has a lid that pops  
16     down on the top.

17            Q.     Sure. Have you published any  
18     papers on the topic of biosolids?

19            A.     Not that I would call that. We  
20     did work for EPA on the operation of aerobic  
21     biological treatment plants, and -- which ended  
22     up in a report that was distributed to every  
23     wastewater plant in the United States.

24                     And there was extensive discussion